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DEPARTMENT OF TRANSPORTATION

National Highway Traffic Safety Administration

[Docket No. NHTSA-2020-0068; Notice 2]

General Motors LLC, Grant of Petition for Decision of Inconsequential Noncompliance

AGENCY: National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT).

ACTION: Grant of petition.

SUMMARY: General Motors LLC, (GM) has determined that certain model year (MY) 2017–2020 Cadillac XT5, MY 2020 Cadillac XT6, and MY 2017–2019 GMC Acadia motor vehicles do not fully comply with Federal Motor Vehicle Safety Standard (FMVSS) No. 302, *Flammability of Interior Materials*. GM filed a noncompliance report dated May 29, 2020. GM subsequently petitioned NHTSA on June 19, 2020, for a decision that the subject noncompliance is inconsequential as it relates to motor vehicle safety. This notice announces the grant of GM's petition.

FOR FURTHER INFORMATION CONTACT: Kelley Adams-Campos, Safety Compliance Engineer, Office of Vehicle Safety Compliance, NHTSA, kelley.adamscampos@dot.gov.

SUPPLEMENTARY INFORMATION:

I. Overview: GM has determined that certain MY 2017–2020 Cadillac XT5, MY 2020 Cadillac XT6, and MY 2017–2019 GMC Acadia motor vehicles do not fully comply with the requirements of paragraphs S4.2 and S4.3(a) of FMVSS No. 302, *Flammability of Interior Materials* (49 CFR 571.302). GM filed a noncompliance report dated May 29, 2020, pursuant to 49 CFR part 573, *Defect and Noncompliance Responsibility and Reports.* GM subsequently petitioned NHTSA on June 19, 2020, for an exemption from the notification and remedy requirements of 49 U.S.C. Chapter 301 on the basis that this noncompliance is inconsequential as

it relates to motor vehicle safety, pursuant to 49 U.S.C. 30118(d) and 30120(h) and 49 CFR part 556, *Exemption for Inconsequential Defect or Noncompliance*.

Notice of receipt of GM's petition was published with a 30-day public comment period, in the **Federal Register** (86 FR 27957, May 24, 2021). No comments were received. To view the petition and all supporting documents log onto the Federal Docket Management System (FDMS) website at https://www.regulations.gov/. Then follow the online search instructions to locate docket number "NHTSA-2020-0068."

II. Vehicles Involved: Approximately 166,938 MY 2017–2020 Cadillac XT5, MY 2020 Cadillac XT6, and MY 2017–2019 GMC Acadia motor vehicles manufactured between October 29, 2015, and March 20, 2020, are potentially involved.

III. Noncompliance: GM explains that the noncompliance is that the subject vehicles are equipped with ventilated front seats that do not meet the flammability requirements set forth in paragraphs S4.2 and S4.3(a) of FMVSS No. 302. Specifically, when tested separately, one out of four composite layers had burn rates that ranged from 186 mm/min to 189 mm/min, exceeding the maximum burn rate of 102 mm/min.

IV. Rule Requirements: Paragraphs S4.2 and S4.3(a) of FMVSS No. 302 include the requirements relevant to this petition. Any portion of a single or composite material which is within 13 mm of the occupant compartment air space shall meet the requirements of S4.3. "Occupant compartment air space" means the space within the occupant compartment that normally contains refreshable air. The requirements of S4.3 shall be met when any material that does not adhere to other material(s) at every point of contact is tested separately, and when any material that does adhere to other material(s) at every point of contact is tested as a composite.

V. Summary of GM's Petition: The following views and arguments presented in this section, "V. Summary of GM's Petition," are the views and arguments provided by GM and do not reflect the views of the Agency. GM describes the subject noncompliance and contends that the noncompliance is inconsequential as it relates to motor vehicle safety.

In support of its petition, GM submitted the following:

1. Background:

Noncompliance Description: The seat cushions in the subject vehicles equipped with ventilated front seats fail to conform to FMVSS No. 302. Certain components and/or composite layers of the seat-vent mat assembly ("vent bags") do not "adhere to other material(s) at every point of contact," therefore, per S4.2.1 of FMVSS No. 302, must meet the requirements of S4.3 when tested separately. When tested separately, one of four layers did not meet the burn rate requirement. All other components of the seat required to meet FMVSS No. 302 comply with the standard.

The one noncompliant "layer" is a composite made up of four different materials with a fifth material, cushion scrim ("scrim"), located peripherally on the underside of the seat foam. The scrim's presence on a FMVSS No. 302 test sample depends on the location where the sample is cut for testing. The sample may not have any scrim if cut in the center, or it may have scrim if cut closer to the edges of the seat. (See Figure 6 of the petition). When the FMVSS No. 302 test sample is cut from an area containing the scrim, a very thin pressure sensitive adhesive tape ("adhesive tape" or "PSA tape") does not comply with the flammability requirements because the scrim shields the flame from the self-extinguishing foam just above it. This combination of adhesive tape, scrim, and a small amount of foam only exists in an FMVSS No. 302 test sample and does not exist as a stand-alone group of materials exposed to flame as installed in the subject vehicles' seats. As installed in the seat, the very thin adhesive tape and scrim are roughly 11.4 mm from the occupant (refreshable) air space underneath the seat and are sandwiched among many other materials, including the self-extinguishing seat foam.

The Layers Tested: The vent bag assembly has four layers that must be tested separately for FMVSS No. 302. (See Figures 4A and 4B in the petition) Layer 1 is adjacent to the occupant (refreshable) air space under the seat. Layer 4 is closest to the seated occupant but furthest from the air space under the seat.

The following materials make up each layer, bottom to top:

- Layer 1: Composite; Bottom Felt plus Film (not adhered to all points of contact to layer 2; tested separately)
- Layer 2: Single; Filler (not adhered to all points of contact to layer 3; tested separately)
- Layer 3: Composite; Film plus Top Felt plus PSA tape plus Cushion Scrim plus Cushion Foam
- Layer 4: Composite; Same as layer 3 less the cushion scrim

The difference between Layers 3 and 4 is the presence of scrim. Unlike the other materials, the scrim is localized, resulting in two (2) different composite "layers" dependent on the seat foam cross section. The materials present in layer 3 and layer 4 are adhered at all points of contact and each layer is tested as a composite. The seat foam is cut to comply with S5.2.1, which requires a maximum composite thickness of 13 mm. One sample of each "layer" was taken from different locations on the seat to ensure one captured the scrim. Layer 3 was cut to capture scrim and layer 4 was cut closer to the center of the seat and does not capture any scrim. (See Figure 6 in the petition). The only layer that did not meet FMVSS No. 302 is layer 3, containing scrim. All other layers meet the burn rate requirements. When testing layer 3 in accordance with FMVSS No. 302, which required a flame applied directly to the felt-with-film liner, the burn rates ranged from 186 mm per minute to 189 mm per minute and did not pass the requirements of FMVSS No. 302 S4.3(a). Layer 4, however, which is the same

composite but without the scrim, had a burn rate of only 12 mm per minute to 24 mm per minute when tested in the same manner. The higher burn rates for layer 3 were caused by the unique interaction of the adhesive tape, scrim, and truncated seat foam. The scrim is flame-retardant, but the thin layer of adhesive tape is not. In layer 3, the scrim shields the flame from interacting with, and being slowed down or extinguished by, the self-extinguishing foam above. With layer 4, which had a much lower burn rate, the foam has a bigger effect and significantly slows down the burn rate.

2. **GM's Reasoning:** GM describes the subject noncompliance and contends that the noncompliance is inconsequential as it relates to motor vehicle safety. In support of its petition, GM submitted the following:

   a. The seat vent bag assembly as installed in the vehicle meets FMVSS No. 302 flammability requirements. The noncompliance is created not by the materials in the seat but by the unique way in which the 102[1] x 356 mm section is selected for purposes of FMVSS No. 302 testing. When that section is taken from the edge of the seat, the 13-mm composite contains portions of scrim which, in combination with the adhesive tape, increases the burn rate of that sample, i.e., layer 3. FMVSS No. 302 requires the flame to be applied directly to the felt-with-film liner, which is adjacent to the adhesive tape and cushion scrim, and that interaction limited the foam's ability to slow down the burn rate, exceeding the 102 mm per minute requirement.

      In their installed application, however, the adhesive tape and scrim would never be exposed to an open flame because they are well encased from the air spaces below (and above) the seat by layers of self-extinguishing or FMVSS No. 302 compliant materials. Specifically, the scrim is encased by at least 11.4

[1] In their petition, GM mistakenly refers to 102 mm as 100 mm.

mm of materials from the air space below. Encasing the scrim from the air space below are two layers of the felt-with-film liner composite, the filler, and the adhesive tape. Tested separately, the felt-with-film liner has a burn rate of 42 mm per minute and the filler is self-extinguishing. Moreover, the as-installed seat has more than 13 mm of self-extinguishing seat foam above the adhesive tape and scrim, and the scrim is localized and only exists in certain areas. Taken as a whole, the adhesive tape and scrim have a negligible effect on the overall burn rate. Layer 4 (same as layer 3 less the scrim) is a closer representation of the relative percentage of component materials and has a burn rate of only 12 mm per minute to 24 mm per minute.

The purpose of FMVSS No. 302 is to "reduce the deaths and injuries to motor vehicle occupants caused by vehicle fires, especially those originating in the interior of the vehicle from sources such as matches or cigarettes." The combination of adhesive tape, scrim, and truncated seat foam that is causing the FMVSS No. 302 noncompliance would never be exposed to an open flame or an ignition source (like matches or cigarettes) in its installed application, because they are within and surrounded by FMVSS No. 302 complying materials. A flame emanating from the occupant (refreshable) air space below the seat must travel through the felt-with-film liner (described as layer 1 above) and the filler (described as layer 2 above) before even having the potential to contact the adhesive layer or scrim.

b. GM testing and design review of the vent bag assembly and its components indicate that the chance of fire or flame induced by a malfunctioning ventilator is essentially zero. Unlike the situation in Toyota's February 21, 2014, petition for inconsequentiality, which NHTSA granted, (*see* 80 FR 4035, January 26, 2015) there are no heater elements in GM's seat. In

contrast, the subject seats contain a seat ventilator which circulates unheated air. The ventilator and associated motor are at least 27 mm from the adhesive tape and scrim and are separated by self-extinguishing and FMVSS No. 302 compliant materials. There is essentially zero risk that the seat ventilator or the associated motor could cause the seat materials to ignite.

c. As installed in the vehicle, the adhesive tape is a very small portion of the soft mass of the seat and has an insignificant (i.e., negligible) adverse effect on the burn rate of the vent bag assembly. The adhesive tape is only 0.03% of the seat mass and is positioned within the seat material stack more than 11.4 mm from the occupant (refreshable) air space below. Therefore, the adhesive tape would have an insignificant adverse effect on the overall interior material burn rate and the potential for occupant injury due to interior fire.

d. The exact same seats with the exact same materials meet FMVSS No. 302 when assembled in a different manner, changing the composition of the composite test sample to include the filler (layer 2). Using a "heated surface" molding process, versus "radio frequency" welding used in the subject vehicles, the filler layer adheres at all points of contact to the upper felt-with-film material of layer 3 and layer 4. Unlike in the subject vehicles, where the filler layer was required to be tested separately, the filler layer becomes part of the composite sample for testing. The applied flame must travel through the self-extinguishing 10 mm thick filler layer prior to contacting the adhesive tape in the upper composite material. The new composite burn rate is self-extinguishing to 53 mm per minute.

e. GM is not aware of any injuries or customer complaints associated with this condition.

3. **NHTSA has granted similar inconsequential petitions in the past.** NHTSA has granted at least two petitions for inconsequentiality for similar issues: Toyota's February 2014 petition for inconsequential noncompliance (*see* 80 FR 4035, January 26, 2015), and Cosco Inc.'s 1998 petition for a similar issue. (*See* 63 FR 30809, June 5, 1998.)
4. **Correction of Noncompliance**: To address this noncompliance, GM's suppliers have begun to use the "heated surface" molding process which results in the filler and felt-with-film liner to be adhered at all points. Through testing, GM confirmed that the vent bags assembled with this process comply with S4.3(a) for FMVSS No. 302. This process will be used to correct the noncompliant vehicles in production and parts in service inventory. This noncompliance was addressed in production for all applicable vehicles manufactured on or after May 26, 2020.

GM concludes that the subject noncompliance is inconsequential as it relates to motor vehicle safety, and that its petition to be exempted from providing notification of the noncompliance, as required by 49 U.S.C. 30118, and a remedy for the noncompliance, as required by 49 U.S.C. 30120, should be granted.

VI. NHTSA's Analysis: NHTSA has reviewed GM's analyses that the subject noncompliance is inconsequential to motor vehicle safety. The burden of establishing the inconsequentiality of a failure to comply with a performance requirement in a standard—as opposed to a labeling requirement—is more substantial and difficult to meet. Accordingly, the Agency has not found many such noncompliances inconsequential.[2] Potential performance failures of safety-critical equipment, like seat belts or air bags, are rarely deemed inconsequential.

An important issue to consider in determining inconsequentiality based upon NHTSA's prior decisions on noncompliance issues is the safety risk to individuals who experience the type

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[2] *Cf. Gen. Motors Corporation; Ruling on Petition for Determination of Inconsequential Noncompliance*, 69 FR 19897, 19899 (Apr. 14, 2004) (citing prior cases where noncompliance was expected to be imperceptible, or nearly so, to vehicle occupants or approaching drivers).

of event against which the recall would otherwise protect.[3] NHTSA also does not consider the absence of complaints or injuries to show that the issue is inconsequential to safety. "Most importantly, the absence of a complaint does not mean there have not been any safety issues, nor does it mean that there will not be safety issues in the future."[4] "[T]he fact that in past reported cases good luck and swift reaction have prevented many serious injuries does not mean that good luck will continue to work."[5] NHTSA considered several factors specific to this petition and provides the following analysis:

1. The adhesive tape layer of the seat-vent mat assembly ("vent bag") as installed in the subject vehicles is covered by more than 13 mm of self-extinguishing seat foam above and approximately 11.4 mm of combined felt-with-film liner (with a burn rate of 42 mm/min) and self-extinguishing filler below. These materials comply with FMVSS No. 302 thus, the adhesive tape is protected from contact with an ignition source originating from the occupant space.
2. When the same materials, having the same thicknesses, relative positioning and properties as those in the subject vehicles, are assembled such that the filler, i.e., layer 2, is instead adhered to the upper felt-with-film liner at all points of contact, the resulting test sample, with a burn rate of self-extinguishing to 53 mm per minute, complies with FMVSS No. 302.
3. GM also stated that NHTSA has granted previous petitions whose facts align with those at issue in the instant case. These include a Toyota petition (80 FR 4035, January 26, 2015), and a Cosco petition (63 FR 30809, June 5, 1998). In each of these prior petitions, the noncompliant material would not normally be exposed to ignition sources in its installed

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[3] *See Gen. Motors, LLC; Grant of Petition for Decision of Inconsequential Noncompliance*, 78 FR 35355 (June 12, 2013) (finding noncompliance had no effect on occupant safety because it had no effect on the proper operation of the occupant classification system and the correct deployment of an air bag); *Osram Sylvania Prods. Inc.; Grant of Petition for Decision of Inconsequential Noncompliance*, 78 FR 46000 (July 30, 2013) (finding occupant using noncompliant light source would not be exposed to significantly greater risk than occupant using similar compliant light source).

[4] *Morgan 3 Wheeler Limited; Denial of Petition for Decision of Inconsequential Noncompliance*, 81 FR 21663, 21666 (Apr. 12, 2016).

[5] *United States v. Gen. Motors Corp.*, 565 F.2d 754, 759 (D.C. Cir. 1977) (finding defect poses an unreasonable risk when it "results in hazards as potentially dangerous as sudden engine fire, and where there is no dispute that at least some such hazards, in this case fires, can definitely be expected to occur in the future").

application because it was surrounded by materials compliant with FMVSS No. 302 and the noncompliant material represented a small percentage (no greater than 1.1 percent in either case) of the interior fabric. NHTSA evaluates each petition on its individual facts and does not consider itself to be bound by these earlier grants. The relative measure, i.e., percentage, of a material characteristic, i.e., mass, surface area, thickness, etc. without consideration of other factors, e.g. the surrounding of the noncompliant material with complying materials, does not alone mean such a material would not significantly fuel a fire upon exposure to an ignition source. Nonetheless, NHTSA has evaluated the subject petition and has made a determination in a similar fashion.

VII. NHTSA's Decision: In consideration of the foregoing, NHTSA finds that GM has met its burden of persuasion that the subject FMVSS No. 302 noncompliance in the affected vehicles is inconsequential to motor vehicle safety. Accordingly, GM's petition is hereby granted, and GM is consequently exempted from the obligation of providing notification of, and a free remedy for, that noncompliance under 49 U.S.C. 30118 and 30120.

NHTSA notes that the statutory provisions (49 U.S.C. 30118(d) and 30120(h)) that permit manufacturers to file petitions for a determination of inconsequentiality allow NHTSA to exempt manufacturers only from the duties found in sections 30118 and 30120, respectively, to notify owners, purchasers, and dealers of a defect or noncompliance and to remedy the defect or noncompliance. Therefore, this decision only applies to the subject vehicles that GM no longer controlled at the time it determined that the noncompliance existed. However, the granting of this petition does not relieve vehicle distributors and dealers of the prohibitions on the sale, offer for sale, or introduction or delivery for introduction into interstate commerce of the noncompliant vehicles under their control after GM notified them that the subject noncompliance existed.

(Authority: 49 U.S.C. 30118, 30120: delegations of authority at 49 CFR 1.95 and 501.8)

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